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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,945	02/10/2006	Constantinos D. Diakoumakos	HAM 830015	4563

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EXAMINER

MC CULLEY, MEGAN CASSANDRA

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/23/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/567,945

**Applicant(s)**

DIAKOU MAKOS ET AL.

**Examiner**

Megan McCulley

**Art Unit**

1796

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 30-44 is/are pending in the application.
- 4a) Of the above claim(s) 31-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Election/Restrictions***

Newly submitted claims 31-44 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The inventions of new claims 31-44 and previous (now cancelled) claims 16-29 are related as mutually exclusive species in an intermediate-final product relationship. Distinctness is proven for claims in this relationship if the intermediate product is useful to make other than the final product, and the species are patentably distinct (MPEP § 806.05(j)). In the instant case, the intermediate product is deemed to be useful as paint and the inventions are deemed patentably distinct because there is nothing of record to show them to be obvious variants.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 31-44 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Maekawa et al. (US 2002/0040098) in view of Eichorst et al. (US 2001/0019813) in view of December et al. (U.S. Pat. 6,471,843).

Regarding claim 30: Maekawa et al. teaches mixing (para. 80) a composition and curing (para. 90), the composition comprising a cyclocarbonate group (para. 49), particles/platelets of clay (para. 79) and a hardener/crosslinking agent (para. 55).

Maekawa et al. does not teach the platelets having a thickness of less than 25 angstroms or an aspect ratio of higher than 10. However, Eichorst et al. teaches a polyurethane composition (abstract) comprising clay platelets of montmorillonite (para. 43) with a thickness of about 0.001 micron and a diameter of 0.050 microns (para. 43). This is calculated to 10 angstroms thick and an aspect ratio of 50. Maekawa et al. and Eichorst et al. are analogous art because they are both concerned with the same field of endeavor, namely urethane based compositions filled with clay particles. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the specific clay particles of Eichorst et al. with the composition of Maekawa et al. and would have been motivated to do so for such desirable properties as increased electrical conductivity and optical transparency as stated by Eichorst et al. (para. 25).

Further, Maekawa et al. does not teach a non-isocyanate based polyurethane. However, December et al. teaches a non-isocyanate based polyurethane (col. 2 lines 43-52). Maekawa et al. and December et al. are analogous art because they are both concerned with the same field of endeavor, namely chemical resistant adhesive compositions. At the time of the invention a person having ordinary skill in the art would

have found it obvious to combine the non-isocyanate polyurethane of December et al. with the composition of Maekawa et al. and would have been motivated to do so for such desirable properties as decreased environmental concerns, as evidenced by December et al. (col. 2 lines 1-10).

### ***Response to Arguments***

Applicant's arguments filed April 9, 2009 have been fully considered but they are not persuasive, because:

A) Applicant's argument that Maekawa et al. do not suggest adding the clay during the reaction is not persuasive. The examiner agrees that Maekawa et al. teaches a preformed polyurethane in the aqueous dispersion/block copolymer mixture (para. 49). However, Maekawa et al. also teaches that this block copolymer and polyurethane (organic materials) are crosslinkable/polymerizable (para. 49) and have a cyclocarbonate group (para. 49). This still crosslinkable group is in the aqueous dispersion with the particles of clay (para. 79), and then the aqueous dispersion is cured. Therefore, the steps of the method are met in the prior art since the polymerizable organic material having a cyclocarbonate group, clay, and hardener are mixed, and then cured.

B) In response to applicant's argument that Eichorst et al. does not teach forming the polyurethane in the presence of the platelets or that December et al. teaches forming the polyurethane in the presence of the platelets, the test for obviousness is not whether the features of a secondary reference may be bodily

incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In this case, Eichorst et al. is relied on for disclosure concerning the platelets and December et al. is relied on for disclosure concerning the motivation to remove isocyanates. The fact that all limitations are not taught in these references is not germane since all limitations can be found in the prior art as a whole and set forth in the rejection above.

C) Applicant's argument that the instant invention has unexpected results over the prior art is not persuasive. The comparative examples are not a comparison with the closest prior art, Maekawa et al., since the comparisons do not contain any clay, while Maekawa et al. teaches using clay particles. See MPEP 716.02(e).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Thursday 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

/M. M./  
Examiner, Art Unit 1796